

THE  
PSYCHOLOGICAL BULLETIN

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THE ACQUISITION OF SKILL IN TYPE-WRITING;  
A CONTRIBUTION TO THE PSYCHOL-  
OGY OF LEARNING.

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This investigation was undertaken in the hope of getting further information about some uncertain factors in the learning process.

*Method and Conditions.*—One hour each day was given to the test (and this testing constituted also the sole practice of the subject). The number of words written during the hour was recorded, and from these daily records the curve for this learning process was drawn. The subject kept track of his daily average, though in most instances the introspective notes were written before he was aware of the record that he had made for that day. The writing was from copy and the subject wrote as rapidly as possible, trying always to keep himself at the highest degree of effort. The hour for work was in the afternoon. In a few instances university duties made a change of time necessary, but such variation in the regular program was always recorded and its possible effect upon the curve was considered. The physical condition of the subject was also carefully noted each day. Unforeseen professional duties coming immediately after the first day's practice interrupted the work for the four following days, but during the remainder of the investigation there were only two interruptions in the continuity of the work, *i. e.*, on the sixteenth and thirty-first days. These two interruptions were caused by sickness. It will be seen

from this that while the investigation covered fifty days only forty-four entered into the curve.

The type-writer used was a Smith Premier No. 4. The subject (the writer) had never used any kind of a type-writer except to slowly finger out about a dozen short business letters two years before. It is doubtful if the number of words in all these letters exceeded five hundred.

*Preliminary Statement.*—The number of words written during the hour is shown on the vertical axis and the days are on the horizontal. The light line represents the daily record, while the heavy line is the smoothed<sup>1</sup> daily record.

On account of the variation in the length of words it seemed best to control this possible source of error by also recording the number and parts of lines written during the hour. This was begun on the twenty-third day and continued without interruption until the end of the investigation. The resulting curve differed so little, however, from the one given below that its reproduction here would be useless. The general course and form of the curve were unaltered.

At the close of each hour's test a record was made of any facts that had a bearing on the curve. Type-writing is particularly adapted to introspection as the subject is able to catch some of the fleeting processes that elude him when learning to write short-hand. These introspections were also carefully noted at the time.

*Description of the Curve and Discussion of its Form.*—

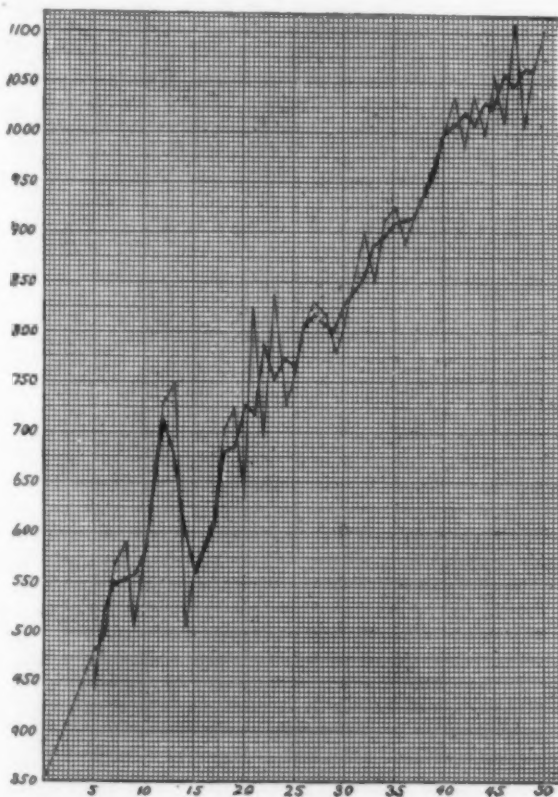
The initial rise, as before in learning short-hand,<sup>2</sup> was clearly due to the ease with which a few imperfect coördinations and associations are learned and to their effectiveness at this early stage. This rise is even more rapid in type-writing, because one learns to locate letters on the key-board more quickly than to associate new symbols with sounds.

The long drop on the fourteenth day was due, in large part

<sup>1</sup> The method used in smoothing was to average the records for the first three days, then those for the second, third and fourth days, next those for the third, fourth and fifth days, etc., to the end. Naturally smoothed values could not be given for the first and last days. Consequently these days are not represented on the smooth curve.

<sup>2</sup> *Am. Jour. of Psychology*, XIV., 1903, p. 227.

at any rate, to harder 'copy.' Up to that time the subject had copied long personal letters, but on the fourteenth day he changed to lectures on the history of education. The average length of the words was much greater, and there were fewer of the short words frequent in letters and which the subject had come to write with considerable ease. As the curve for this period shows, seven days were required to excel the highest



record reached with personal letters. That the greater difficulty of 'copy' was the cause of the drop was evident not merely from the immeasurable 'feeling' of greater effort with lessened result but also from actual comparison of the two sorts of material. In one respect it is unfortunate that a change was made, since it breaks the continuity of the curve. But for the change the curve would probably have continued an upward

serrate course. From another point of view, however, it is fortunate, since this unevenness of assigned subject matter is just what often happens in the class-room.

The same irregularity from day to day that was observed in tossing balls and in the short-hand practice<sup>1</sup> was apparent here. Retardation alternates with progress. In many of the cases no reason could be found for the drop. The record for the ninth day illustrates this. The notes for that day say that 'the material was no harder than usual' and the subject was apparently in his usual state of health. Throughout the practice, on that day, he thought that he was doing at least as well as at any previous time. The only day when the low record could be accounted for by lowered physical vitality was the forty-eighth day.

From the twenty-second day the subject tried to observe the mental processes that accompanied the writing, and as these introspections were carefully written down at the close of the hour while everything was fresh in the memory, they form a kind of continuous history of the psychology of this learning process, so far as the subject could observe without interfering with the process itself, and in type-writing one may do this with little or no mental disturbance.

*Introspective Notes with Discussion of Their Significance.*—It has seemed best to give these notes quite fully, indicating the days on which they were taken.

*22d Day.*—The past week has been one of discouragement. The pleasure in the work that characterized the first ten or twelve days gave way to ennui.

It will be observed that the period of enjoyment of the work coincides with the first rapid rise. The work was new and progress continuous. The mental depression and the first drop in the curve begin at about the same time. In the experiments on ball-tossing,<sup>2</sup> and in learning short-hand writing,<sup>3</sup> the same ennui was observed, and at that time it was thought to be an important factor in making plateaus. The same feeling during arrest of progress in type-writing sustains this view, though

<sup>1</sup> *Am. Jour. of Psychology*, XIV., 1903, p. 201.

<sup>2</sup> *Am. Jour. of Psychology*, XIV., 1903, p. 213.

<sup>3</sup> *Ibid.*, p. 229.

here the greater difficulty of the material was an additional element in the retardation.

Uncertainty concerning the significance of periods of no progress was the immediate cause of this investigation. Bryan and Harter are of the opinion that 'a plateau in the curve means that the lower-order habits are approaching their maximum development but are not yet sufficiently automatic to leave the attention free to attack the higher-order habits,' and they add that 'the length of the plateau is a measure of the difficulty of making the lower-order habits sufficiently automatic.'<sup>1</sup> Previous investigation had led the writer to doubt whether there is any such separation of lower and higher-order habits, and notes bearing upon this were made from day to day.

*23d Day.*—Observation to-day left no doubt that after the first extended plateau the reaction on the keys is the same as it has been from the start, *i. e.*, writing by letter—only the associations are made more quickly. Up to the present time there is nothing that can properly be called a higher-order habit.

The several constituent factors that contribute to the acquisition of skill in type-writing are evidently operative together, though seemingly with varying degrees of prominence at different stages of the process. This will be seen from the introspective notes that follow.

*24th Day.*—Hands and fingers are clearly becoming more flexible and adept. The change now going on, aside from growing flexibility, is in learning to locate keys without waiting to see them. In other words, it is location by position. Observation, however, reveals the fact that association and location by sight are as yet far from perfect and are still in process of improvement. That is to say, both kinds of association are growing at the same time—that by sight improving and that by location (muscular, etc.) forming. The ennui so noticeable during the last ten days is disappearing. The feeling of pleasure which characterized the beginning of the work has returned.

The same difficulty in keeping up a maximum degree of effort to which the writer has called attention in an earlier paper<sup>2</sup> was observed in this investigation. Its effect upon the curve is undeniable, as will be seen from the note and score for the twenty-fifth day.

*25th Day.*—I wrote<sup>3</sup> easily to-day—so easily indeed that I often found myself dropping into a state of relaxation, and great effort was continually

<sup>1</sup> *PSYCHOLOGICAL REVIEW*, VI., 1899, p. 357.

<sup>2</sup> *Am. Jour. of Psychology*, XIV., 1903, p. 213.

<sup>3</sup> It has seemed best to give these introspective notes as they were originally written, retaining the first personal pronoun.

needed to approximate the maximum effort. It seems evident that the process of association and automatization is exceedingly complex. There is clearly no separation of periods in which lower- and higher-orders of habits are formed. Early in the practice certain very common and short words like 'the' and 'is' and 'an' seemed to lose their letters and the reaction to them became word-reaction. While this is clearly the case at the present time, still the general run of reactions is unquestionably of the letter type. Location (muscular, etc.), letter and word associations are now in process of automatization.

The variation, from day to day, in the learner's effective power is seen in the record for the twenty-sixth day. Frequently it is impossible to account for the difference.

*26th Day.*—The keys were not struck so readily to-day. Associations were slow, though my physical condition was apparently as good as usual. The feeling was very different from yesterday, when the associations were made so easily that at times it was impossible to avoid dropping into a state of ease which seriously interfered with the rapidity of the work. Though the score was kept up to-day it was done only with the greatest effort.

*27th Day.*—The work went easily to-day, but it was clearly letter-writing. Association by position is becoming more rapid, but sight is still an absolutely essential prerequisite to striking the right letter. The gain is evidently in increased rapidity of letter association. At times I found myself tending to drop into less intensive work, but this tendency was easily overcome. The feeling of yesterday was altogether absent. I felt that I could do it and that I was doing it successfully.

*28th Day.*—As one increases in skill dispersion of the attention becomes more marked. Growing automatization of associations and movements lessens the attention needed for each movement and so makes it possible to take in more of the situation. In this way one is able to look ahead somewhat, and this facilitates the reactions.

The notes for the twenty-ninth day are important in connection with the question of lower- and higher-order habits. A higher-order habit is evidently in the beginning of its formation, though the lower-order is still very imperfect, and in the acquisition of these higher-order habits the emotional state of the subject is seen to be a factor, as has been found to be the case in the formation of plateaus.

*29th Day.*—Reaction by the muscular sense is improving. Up to the present time the only words that can be said to be responded to as words, instead of as words composed of certain letters, are still 'the,' 'an,' 'of,' 'is' and a few other like common and short words. But even in these cases reaction is not infrequently response to the single letters composing the word. The question of maximum attention also is involved here. Only when I keep myself keyed up to the highest pitch of effort do I react to these words as words instead of to the letters composing them. It was impossible to-day to keep up the maximum effort, though associations seemed fairly correct and rapid.

*32d Day.*—The feeling that failure to maintain the maximum effort was the cause of the slight advance during the last few days led to the determination to resist every tendency to lag. To-day's improvement in the score is chiefly due, without doubt, to continual strain to keep up the maximum degree of effort. I doubt whether I wrote any faster, indeed I seemed to find the letters with a little more than the usual difficulty, but I 'pulled myself together' quicker after finishing a word. I kept nerved up to the work. The result was very exhausting and could not have been continued much longer than the hour. The writing to-day was clearly by letter.

*33d Day.*—It was very evident to-day that the writing was by letter and not by word. Even in the short, common words previously referred to, the letters constantly tended to obtrude themselves into consciousness when the least difficulty was experienced. The learning process is not, however, uniform from day to day. Certain elements in the process at times outstrips the others. In type-writing position-associations (localization by the muscular sense), sight-associations (letter associations) and the more complex word-writing, each have their turn in the foreground. We learn by sections. Energy is not equally distributed and when one element, as perfection of muscle movement or of some association, is having its turn the others must wait. But there is no proper time-separation into lower- and higher-order habits. Indeed it is not at all certain that the several component events in the process will always succeed one another in the same order in different individuals who are learning to do the same thing nor in the same individual in learning different acts.

*34th Day.*—I exerted myself to the utmost to-day to keep up a continuous maximum effort. Even with this continued strain I found myself at times dropping to a lower degree of efficiency. Severe effort to maintain a maximum degree of efficiency comes to be a continual recalling of oneself from a condition of sinking efficiency. With effort we put forth great energy, but it at once begins to droop and a new effort is needed to bring it up again to the point of greatest efficiency. It is probable that the variability of attention, which must be continually recalled to duty, is an important element in the variation of maximum effort. Later, of course, physiological fatigue enters, but hardly at the outset.

It is an interesting fact that on the thirty-fifth day, three days before the beginning of a new and almost continuous rise, the subject felt confident that he had practically reached his physiological limit. This is probably a phase of the emotional element culminating in the monotony that plays so large a part in the formation of 'plateaus.' Because of its significance the note is given below, just as it was written on that day.

*35th Day.*—It was clear to-day that I had practically reached my physiological limit for copying from fairly difficult matter, owing to the necessity of frequently referring to the manuscript. Any progress after this, I should say, would be exceedingly slow and the final limit cannot be much higher. It requires constant effort to bring the attention back so as to keep reasonably close to the maximum effort. There is a continual relaxation and the spurs must be applied instantly to keep up this speed.

The note for the thirty-sixth day shows the unreliability of one's feelings as a guide. At no time had the work gone so easily and the lessening of the maximum effort was not especially evident, and yet the drop was decided.

*36th Day.*—To-day I seemed to be writing more by words than at any previous time, though it was difficult to determine accurately as close observation disturbed the process and reduced it at once to what was clearly letter writing. In any case the associations came very easily.

Subsequent examination of the notes and their comparison with the curve shows that this period marks a turning point in the process. Everything seems to have been culminating at about this time. While the writing for the following day was by letter, that for the thirty-eighth day was unquestionably word writing. This strengthens the view of the writer noted on the thirty-sixth day, that at that time he was occasionally writing by word.

*37th Day.*—There was a noticeable difference between yesterday and to-day. While associations to-day were rapid they were undoubtedly letter associations, except, again, in the short and frequently recurring words. It would seem from to-day's introspection that muscle movements and letter associations have now reached a fair degree of efficiency, though the latter, at any rate, are as yet by no means instantaneous. Meanwhile mass associations (word associations) seem to be making more progress than formerly. The steps by which this was reached, if it turns out that they predominate during the succeeding stage of progress, were altogether subconscious. All factors of the perfected process have clearly been present almost from the start and the only justification for characterizing any particular stage by one element rather than the other is the prominence of the one or the other factor.

Word associations did predominate during the succeeding stage, as will be seen from the notes for the following days.

*38th Day.*—To-day I found myself not infrequently striking letters before I was conscious of seeing them. Until now it has not been possible to feel sure of this, except for some of the short, common words, but to-day word associations took a long jump forward. They seem to have been perfecting themselves just below the level of consciousness, since on previous days in one or two instances, there have been uncertain indications of their activity. Though clearly more frequent than before, they are still very rare and any little difficulty causes the learner to drop into letter-writing, even after he seems to have begun on the word as a whole. Position associations (muscle sense), also, is coming to the front. I found to-day that I was using them with much more accuracy than at any previous time. Indeed the whole process to-day seemed to show greatly increased power. Associations that in the past have given only the faintest suggestion of their activity—so faint that it was impossible to speak of them with assurance—clearly revealed themselves. It is evident that

the various associations are improving together, though certain ones are perfected earlier than others, *i. e.*, certain processes are well along while others are still in their beginning, at least so far as effective utilization of them is concerned. It has become more evident to-day that the several elements in the process reach a certain degree of efficiency below the level of consciousness. The learner suddenly finds a new factor to reckon with and this new element may not appear above the level of consciousness until it has attained some effective value.<sup>1</sup>

*39th Day.*—The work did not go so easily to-day, though at the end the score was found to be the highest yet made. Constant effort was needed to keep reasonably near my maximum efficiency. All elements of the process, letter, word and position associations, were clearly at work but the letter associations predominated. At times, however, I found myself writing a word without being conscious of the letters, and position associations were clearly improving.

Irregularly alternating prominence of letter, word and position associations as shown during the days of this period is characteristic of a learning process.

*41st Day.*—The writing to-day was clearly by words. The number of words that are written at once without consciousness of the letters is increasing.

*42d Day.*—After one has reached a fair degree of efficiency the enthusiasm that increased his available maximum effort lessens and he drops to a lower level than he is really capable of at that time. At this time also one is apt to do better in the second half of the hour for the simple reason that he feels his tendency to relax and 'braces up.' Loss of enthusiasm was the only cause that could be found for to-day's drop. The feeling of monotony was marked.

*43d Day.*—All forms of association were noticeable to-day, but I was mentally fatigued.

*44th Day.*—It was quite evident to-day that all forms of association—letter, position, and word—were operative.

*45th Day.*—The active presence of all forms of association was clearer to-day than at any previous time. Moderately long or unusual words are still written wholly by letter, but the greater number and gradually increasing length of words whose letters do not come into consciousness in the writing is noticeable.

*46th Day.*—I made great effort to-day to raise the score but failed. The strain of attention was so great that, at the end, I was exhausted. All of the associations were at work and it was interesting to observe that they seemed to alternate with one another.

*47th Day.*—To-day everything went easily and again I pushed myself to the utmost to try to rise above the present level. Word- and position-associations were clearly in evidence along with those of letters.

The effect of fatigue on the learning process is shown in the notes for the forty-eighth day. The latest acquisitions—those that count most for growing skill—are for the time being lost.

<sup>1</sup>This same fact was observed in learning to keep two balls in the air with one hand. *Am. Jour. of Psychology*, XIV., 1903, p. 216.

*48th Day.*—I was mentally fatigued to-day and the work did not go well. Word associations were entirely in abeyance and those of position largely so. I worked very hard in order, if possible, to overcome the difficulty, but throughout the hour the writing was wholly by letter and even finding the letters was harder than usual.

*49th Day.*—All forms of association were evident, but the position associations were rather more conspicuous. It seems as though the different elements in the process were irregular in their activity. Even after they have all been observed for some time they vary on different days in their comparative prominence.

The unreliability of one's 'feeling' regarding his success on any particular day has already been noted (see the 39th day) but it was especially evident on the fiftieth day.

*50th Day.*—I seemed to write to-day with an ease not before experienced, and I had no doubt that I would greatly exceed my previous record. One thing was clear: not one form of association merely, but all, were improved and all were operative. The word association is probably, at least in its beginning, brought about by dispersion of the attention, as was shown by the fact that I not infrequently struck the key representing one or two letters ahead of the right one.

#### *Summary of Results and General Inferences.*

1. The learning process is irregular. Periods of advance alternate with those of retardation. The learner makes no progress for several days and then he leaps forward. His new position may be permanently held or he may fall back again; but if he does, it is only for a short time. Sometimes retardation or loss of power may be accounted for by physical condition or in some other way, but again no cause can be assigned for it.

2. As in ball-tossing and in short-hand writing, so here, maximum effort is a variable quantity, at times altogether beyond the learner's control.

3. The acquisition of skill in type-writing is an exceedingly complex process involving both mental and physical elements.

4. The elements involved in this process do not have separate periods for their beginning and development. Both simple and complex factors betray themselves to introspection early in the work, but they are present in different degrees of activity. This difference varies also from day to day, one being predominant one day and another the next. After the acquisition of a few imperfect coördinations and associations the

simple and complex processes intermingle with no distinct separation.

5. There are not one or two periods of delay in which lower-order habits are automatized and preparation made for a higher-order. The investigation in short-hand writing<sup>1</sup> left this question in some doubt, because of the difficulty of introspecting while writing, but this investigation has shown conclusively that in type-writing, at all events, such periods do not exist. Type-writing lends itself especially well to introspection and the subject was able on several days to detect all of the elements from simple letter associations to the complex word associations. Both of these were operative early in the work and, again, at the very last, letter associations were frequent.

6. The learner gradually passes from a period when lower-order habits predominate to a period of predominant higher-order habits. The latter, however, are a part of the process almost from the beginning. Automatization is going on all the time.

7. Plateaus have at least two causes. Considered from the point of view of automatization they are resting places. The learner has overshot his permanent power and must wait until the automatization is perfected. They are also due to a slump in enthusiasm. Monotony overcomes the learner. Further, these two causes react upon one another. After improvement in automatization the learner is able to do better and takes courage. Enthusiasm to advance, now that it is easier, overcomes the ennui.

8. Effort to spurt is helpful if not too severe, but overstrain exhausts the learner and hinders his progress by bringing into the focus of consciousness processes that serve him best when in the background.

9. Physical condition is always an important factor.

10. The process is subconscious. The learner suddenly finds himself doing something that he has not before been aware of. The new acquisition is well along, however, before it is discovered.

<sup>1</sup> *Am. Jour. of Psychology*, XIV., p. 727.

## PSYCHOLOGICAL LITERATURE.

*The Mind of Man. A Textbook on Psychology.* GUSTAV SPILLER.  
The Macmillan Co., 1902.

The author starts out with the commendable purpose of accentuating the need and assisting in the establishment of a psychology of a strictly scientific character. To this end he avoids the company of any who have settled doctrines, and excludes all philosophic speculations. In the introductory discussion the hand of the writer seems to be raised against every method of psychological inquiry which has been employed in the past or is still being used by his contemporaries. The reflective method, if it happens to have discovered any truth, has failed to establish the same scientifically. And whatever psychophysics may accomplish in the future, it has done nothing up to the present. After some defense of Introspection, he himself adopts the method of 'Experimental Introspection.' Wherein this differs so radically from the ordinary experimental method it is not easy to discover; true, he lays the main stress on introspection, but the latter term seems to be used simply of the immediate observation of the facts of experience experimentally arranged or aroused.

Further, the lack of an adequate system of terminology leads to the adoption of a new system of terms, based upon the degrees of complexity of the facts. The formation of a radically new system of terminology even in so young a science as psychology may be considered a somewhat questionable procedure, and that which is offered is neither very complete nor is it based upon strictly scientific distinctions; *e. g.*, the simplest class of 'given things,' 'Integrals' are divided into three classes: (1) Advanced sensations, *i. e.*, sight and hearing, (2) 'Semi-advanced sensations,' *i. e.*, taste and smell, (3) 'Vague undefined systems called elementary sensations or feelings, of which the feelings of touch, of hunger, of pain, of doubt, of effort, of astonishment, afford examples' (p. 503). Such a classification needs no comment. Next in the order of complexity comes the 'compound,' which occurs 'where several systems (*i. e.*, things given) are intimately blended, as in the matter of ordinary observation' (p. 504). And thirdly, the 'complication,' where 'otherwise unconnected systems appear uniformly together.' This terminology is simply covering again, and in a loose manner, what has been done by Wundt and others much more scientifically.

It will make the discussion clearer if one notes at the outset his statement, that it is in neurology, or brain science, coupled with introspection that the hope of the psychologist lies; *i. e.*, psychology separated from physiology can give no consistent account of the facts of mind. Proceeding to the general development, his definition, stated at the beginning but avowedly reached only after the examination of all the data, is as follows: 'Psychology treats of the nature and satisfaction of those distinctive needs which are connected with the central nervous system, and this it treats in systematic conjunction with the systems of sights, sounds, smells, etc., which are developing concurrently; *i. e.*, Psychology treats of the needs which arise out of the relations of the various systems in the organism, and out of the relations of that organism to its environment' (p. 38).

The simplest given elements of mental life are the 'Integrals'; they are the units of thought and comprise the sensations advanced, semi-advanced, and the vague undefined systems called elementary sensations and feelings, together with memory images of these. These qualitatively different integrals, he maintains, may be reduced ultimately to a vague detailless feeling; *i. e.*, there is probably a point where these lowest elements or minimal systems first become differentiated, and this would be the threshold of each particular system. Hence, he concludes, 'probably' all sensations finally shade into one another. In tracing an advanced sensation (*e. g.*, one of vision) back to that elementary homogeneous starting-point of all sensations, he states the following experience: in gradually closing the eyes, the first characteristic of the visual system which disappears is that of depth, then other outlines, then color, and finally the blur passes into a confused feeling void of any optical suggestion. One can but feel that the logic of the conclusion based on such observations as the above leaves much to be desired. As well might one conclude that the elements of water, oxygen and hydrogen, could be reduced to a simpler, by gradually reducing them quantitatively till their particular properties were no longer distinguishable.

There is no full scientific treatment of the sensations. For a very good statement of what is known about the sensations the reader is referred to Külpe's Outline. The question of space comes up in this connection, and after rejecting the views of James and Ward, he takes a position in some respects akin to Herbart's: that sensations for the adult are given in an organized system; in other words, one sensation in respect to its spacial properties is explained by its relation to others.

The feelings proper differ from sensations as integrals of a lower

order, and pleasure-pain, which is regarded as different in nature from the feelings, is identified with a 'neural disturbance,' *e. g.*, 'the cold as felt, and the neural disturbance resulting are separate effects of the objective cold on our organism' (p. 242). Pleasure and pain are connected with the instability of the inmost nervous center; so long as it remains intact the stream of attention flows smoothly and continuously, so soon as it is disturbed or capriciously attacked then we experience pleasure-pain.

The combination of these elements into complex systems is not left, with the old associational school, to be explained by the fact that the corresponding physical elements of the mental complex are already united, nor with what might be called the new associational doctrine, which calls in the activity of apperception to account for the uniting of the elements into compounds, but in his own words: "Just as one who uses a type-writer employs the same steel letters over and over again in copying a book, so we imagine that combinations are produced neurally by some simple process" (p. 207).

His view of the attention is the key to the further explanation of the interconnection and the direction of the stream of thought. Taking as the field of attention what is generally understood as the field of consciousness, rather than the more limited field of apperception, he asks such questions as, "Why does the attention normally not vary in any one individual, or from individual to individual? Why do we during waking hours normally attend to, or tend towards, something or other without interruption?" etc. He can find no clue to the solution of these questions by the examination of 'secondary systems or facts of non-bodily feeling'; hence he is driven to the bodily facts. And assuming now that the central nervous system is the complement of the laboratory of thought, all the facts are readily explicable. Attention is then defined as 'neural functioning.' In the attention he has during normal waking hours a constant activity, it embraces all activity, it functions to the same extent continuously and in varied directions. 'Thus when we say that we attend in a certain direction we mean that we are active in a certain direction' (p. 89). This constant activity, however, is not independent of either organic or extra-organic stimuli, *e. g.*, we do not hear or see except the attention be directed in certain channels, but direction of the attention alone would be futile except for the stimulus.

In attention there is a continuous process, and there is always a more or less complex content present in the field of attention, the elements of this content being combined by some simple neural process.

It remains to be shown how the direction of the attention, or activity, is determined. To quote again: 'We are born with certain gradually changing wants, or functional tendencies, and with a mechanism approximately able to reëstablish equilibrium' (p. 505); *i. e.*, there are present discontinuous needs and a continuous attention process. The direction of the attention process or the succession of the elements which make up the stream of mental life is determined, not by association, nor by will except as will may be identified with the ruling need, but by the above mentioned needs; *i. e.*, 'the flow of thought is only fully explained by the gradually developed process of the satisfaction of needs, or by functional readjustment' (p. 146).

To follow at all fully the nature of central needs, which play so important and novel a rôle, would take one too far afield. In a word, different rôles are performed by different systems. In the body, *e. g.*, the heart, or the alimentary system: these systems are of an unstable nature, and respond to certain stimuli, *i. e.*, there are certain tendencies or needs which stimulate the alimentary system. But these needs of the alimentary system cannot enable it to secure food; that can only be accomplished through the mediation of other systems; and these other systems are set in operation by the central nervous mechanism, the great mediating system. This central system is influenced by other systems and in turn influences them. Central needs, then, are the functional tendencies inherent in the central system under the particular conditions of the present moment. 'A need might be defined as a condition where there is absence of equilibration, as in a feeling which persists until certain changes occur' (p. 297).

To remove the charge of materialism which might be brought by some against such a treatment of psychology, one need but state the author's contention that the antithesis between mind and matter is a false one; since, *e. g.*, a change in the nervous system which may run parallel to a visual picture, does not indicate two disparate groups of facts, the one psychical and the other physical, on the contrary, the former is a visual complex, and the latter is nothing more than a visual-touch complex.

A view somewhat similar as far as the disparateness of the physical and mental facts are concerned, but much more logically and systematically developed, is worked out by Kirschmann in his contribution to the commemorative number of the *American Journal of Psychology*, entitled 'Deception and Reality.'

The principal weakness of Spiller's book lies in its failure to make any satisfactory distinction between the psychical and the physiologi-

cal, which leads to the assumption, at times, that psychical processes have been explained when they have merely been referred to the physiological processes corresponding to them. Again, when one reads, among the statements with reference to the nature of attention made by a group of psychologists, such as Baldwin, Höffding, James, Ladd and others, that 'Külpe holds the regulation views' (p. 62), the value of the references to the literature seems somewhat impaired.

The teleological element, which is freely used, *e. g.*, in the functional tendencies of the central nervous system, as the writer himself observes, requires some clearing up, and the whole book might be more concisely stated. I have indicated what appear to me to be some of the weak points of the book; there are many valuable ones, however, of which only a few could be mentioned in so short a review. The whole is exceedingly bold and independent, and consequently fresh and original, and it is abundantly supplied with concrete illustrations. It contains also the valuable quality of inspiring the reader to investigate and test for himself, which makes the book valuable to a student. But most of these points excepting the last are not the qualities which are specially sought in a general text-book. And one can but conclude that those who are looking for a general text-book on psychology will have still to reflect on the necessity of inspiring someone possessed of the requisite gifts to write such a book.

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#### DEFINITION OF PSYCHOLOGY.

*On the Definition of Psychology.* JAMES WARD. *British Journal of Psychology*, I., pp. 3-25.

The aim of this article is to clear the rough definition of psychology — as the science which describes mental processes — of the implications which lurk in the term 'mental processes.' Professor Ward attacks the subject historically, outlining three stages, each of which is marked by a distinctive conception of the field of psychology.

The first point of view to be considered is that of Aristotle, whose conception implies the organism and the environment, and is essentially biological. But Aristotle differs from modern biologists in making the soul the directive principle in all interaction between organism and environment and in making the soul the final cause for which the organism exists. Looking at the facts from the outside, Aristotle fails to recognize what we now call consciousness as the central feature of all psychological facts.

The psychology of Descartes, restricted as it was to the immediate facts of consciousness, is placed in opposition to this extreme objective position. While recognizing the service which Descartes rendered in placing the emphasis on the conscious subject and in clearing up the hazy materialism of the Aristotelian and scholastic psychology, Professor Ward shows that the reaction was extreme, and that it sprang from a distinction between subject and object which was too analytic in character. Descartes' *res cogitans* really excludes everything empirical, giving rise to the dualism of reason and experience, and Dr. Ward agrees with Kant that such a consciousness is not really conceivable. From the objective point of view Aristotle saw that the soul was necessary in order that the organism should have life. "Descartes, who began from the subjective side, ought to have seen that the organism and the environment were necessary in order that the conscious subject should actually have experience." Because the problem of the relation of mind to body and the problem of the reality of human experience remain unsolved, Professor Ward rejects at once 'the perfunctory definition of psychology as the science of mind, over against which there stands a distinct science of matter.'

In the third stage, according to this retrospect, the extreme subjective position is so modified that it ceases to clash with what is essentially true in the objective view. Kant is given credit for having overcome the difficulties arising from the Cartesian metaphysical assumptions, when he confined all knowledge to sense-given realities and recognized the duality of subject and object as essential to experience. But Kant, in company with his predecessors, fell into other errors which were the result of Descartes' imperfect analysis of the facts of experience. Since Descartes recognized only self-conscious experience, he tended, as Professor Ward indicates, to identify the cognitions of self-consciousness with the facts cognized—an error which dies hard—and, secondly, to confuse the experience with the self-consciousness. The latter error is traced back to the failure to recognize the fact that the 'objective' and 'subjective' of psychology are not the same as the 'objective' and 'subjective' of epistemology. As a result of this error, internal experience, with which psychology has to deal, comes to be considered as derived from an 'internal sense.' But 'internal experience' loses its significance when it is shown that such an 'internal sense' is preposterous. The true internal experience is the experience of the individual mind, as contrasted with scientific knowledge, which is the common product and common possession of many minds.

Professor Ward completes this historical survey with a summary of the results of the reaction during the past century against extreme intellectualism, showing how this movement, together with the growth of genetic and comparative psychology, has tended to shift the emphasis from intellect to will, from cognition to conation, from sensitivity to activity. There is no longer any talk of mere cognition, only the interesting is known. It is urged that, for the psychologist, there can be no consideration of an independent realm of truth. Rather knowledge is a means to ends in evolutionary development, not an end in itself, and accordingly 'the sole function of perception and intellection is to guide action and subserve volition.'

In speaking of the psychical life, Dr. Ward advocates the use of the term 'experience' rather than the ambiguous word 'consciousness.' In particular he takes exception to the use of such expressions as 'states of consciousness,' 'operations of consciousness,' 'form of consciousness,' etc. In this connection he attributes the error underlying such expressions to the separation, in the Cartesian system, of the 'modes of consciousness' from the 'conscious subject.' He claims that those who speak of operations of consciousness have eliminated the subject along with the substance; while others have resolved the modes into ideas or presentations and out of such mind-stuff and its interactions have proceeded to build up experience. Considerable attention is devoted to confuting this last doctrine, for which the name presentationism is suggested as preferable to sensationism or associationism.

At the close of the paper there is a plea for the precedence of analytic over genetic psychology, concluding with the statement that 'whatever method is followed, physiological and comparative psychology must fall back on the facts and analogies of our own experience.'

Evidently Professor Ward did not contemplate the formulation, in this article, of a precise definition of psychology, but by devoting himself exclusively to the consideration of mental processes, and by omitting all but the most meager reference to bodily processes, he practically confines the science to the treatment of the phenomena of private experience, and neglects that important side which is concerned with the conditions under which psychical processes occur, except as those conditions are themselves pure psychical processes.

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## ETHICS AND VALUES.

*Sentimenti Morali.* GUGLIELMO SALVADORI. Florence, Lumachi, 1903. Pp. v + 148.

In this interesting work the author repeats certain conclusions reached in his previous study on the Ethics of Evolution (*L'Etica Evoluzionista*). He does not pretend to construct a new theory of Ethics, for that, he asserts, would be impossible after the profound and accurate investigations of the great masters. Novelty is a mark of philosophic dilettantism; what is needed is to criticize and complete previous views, to popularize their true parts, to destroy what is weak. The writer would therefore put forward a sort of rational eudæmonism compounded of the empirical realism of the utilitarians and the abstract idealism of the metaphysical schools.

One might criticize this project as a piece of dogmatic eclecticism were it not for the originality of the treatment and the charm of style. Thus in the introduction ethical liberty is defined not as a special faculty of the human spirit, but a property of the reason called out by the sovereign needs of the moment. Hence arises the query: How can one put in the conscience of the individual norms of conduct rigidly fixed and valid for all cases? The author's answer is a searching criticism of the Kantian Ethics, a revolt, as it were, of the south against the frigid morality of the north. That the soul is naturally cold and insensible, that it performs good actions simply from a sense of duty, that the natural inclinations to virtue have no moral worth, robs virtue of its graces and attractions. A moral law without feeling, a morality without the affections and sympathies is pronounced inferior to the Ethics of Hellenism and Christianity which made virtuous such things as are sweet and attractive to the human heart. Here arises the need of a psychological analysis of the moral sentiments. Bentham's opportunism, which would make the extrinsic results in pleasure or pain to determine actions, is declared insufficient. There must be some interior principle, else the sanctions of physical, social, political and religious life in all their variety have no unitary substratum. The earlier English utilitarianism is too simple to be true. While the later utilitarians such as John Stuart Mill showed that the external factors were extremely complex, yet the criterion of the moral worth of the feelings is given in the more or less clear consciousness of the right. The moral sanction consists not in the hope of reward or fear of punishment, but simply and solely in an inner feeling of satisfaction or dissatisfaction in which we consider our acts independent of any external authority. Psychology goes too far in making the feelings

determine conduct. They constitute the content of consciousness, whereas intelligence constitutes the form. Feeling is the immediate stimulus to action which could not be determined simply by an idea. The office of reason is to illuminate the moral intuitions. The classes of motives are: (a) Those of sensibility, which are pure psychic facts like simple and immediate reactions to sense perceptions, (b) intellectual motives, which lead to a code purely external to morality and are adverse to that essential quality of morality, namely, spontaneity, (c) rational motives, which are inadequate to explain altruism, since simple reflection is not sufficient to lead to the preference of social utility over individual utility. There are really no moral sentiments in hedonism and utilitarianism. If they take account of the caprice of the moment or the immediate result of the action, conduct becomes irrational and we are driven to an absolute scepticism because such conduct represents the practical negation of every moral law.

The author here rapidly reviews the sentimental school from the Epicureans to Bentham, and the rationalists from the Stoics to Kant. The former have determined the immediate motives of morality but fail to consider a norm, law and universal form for actions. With the Kantians the right becomes an abstract law void of content, not corresponding to the nature of the subject. A good will signifies nothing unless it first determines what the good is, since every voluntary act implies of necessity an object. The sentimentalists are wrong in making morality purely instinctive, the rationalists in making conscience to consist in effort. Virtue implies the fervid enthusiasm of feeling; it also implies a comprehension of abstract rules, the cold exercise of reflection. In the doctrine of perfection is found the reconciliation of the desire for happiness and the idea of the right. Kant considered the will a static something which considered and operated apart from those elements which compose the psychic life — feelings, desires, wishes in intricate and constant interaction. But the will is the last link in a long chain of acts, the last moment in a spiritual process. It is not a faculty but a process through which psychic activity manifests itself in external actions. The character of the will depends on the quality of the motive, *e. g.*, sensible or rational. Hence it is one-sided to speak of the will as legislative and attribute to it the essential function of reason.

After this searching criticism of the Kantian ethics the writer attacks more recent notions. The biological view, he says, makes conduct simply a phenomenon of action and reaction, reducible to an order purely reflex and mechanical. But the conscience itself pos-

assesses an original activity. In the growing complexity of psychic motives, the sentiments represented as most developed are able to prevail over simple presentations, the motives more complex and more ideal over simple sensations and pure appetites. The moral act is not a simple reaction of the state of conscience produced by the exterior world, but the result of a conscious determination which presupposes a complex of feeling, of ideas, and of intentions envisaging an ideal end. Psychic evolution shows the rise of moral ideals. As from the simpler sensations arises the more complex evolution, and from primitive perceptions more developed intelligence, so from feelings and acts ethically indifferent are derived the moral feelings and acts. Man's instinctive energies operate at first in an indeterminate way, and only in virtue of the contrary forces of external nature are they brought to the concentration necessary to attain the ends of existence. When the end is attained pleasure arises; when not, pain. The ethical norms represent necessary relations, uniform and constant, and as such are laws analogous to natural laws of the external world. But these relations are ideal, derived from a process of abstraction, and so presuppose the activity of the creative conscience. So-called physical altruism, animal ethics, sub-human justice, social and sympathetic instincts cannot constitute morality. The essence of morality lies in the ideal.

Chapter II. deals with the classification of the moral sentiments into egoistic and altruistic; it presents the views of the individual as a means in society and of the primacy of society over the individual which impedes the realization of individual happiness. Thus the doctrine of Nietzsche is declared contradictory in that, while it wishes to elevate human individuality, it ends in its mutilation and destruction. Every immoral desire is a diminution of human individuality, whereas every moral desire, which develops in sociability, is an expansion of the ego. For the same reason Schopenhauer is in error in reducing all duties to mere self-preservation. Psychological analysis shows that justice and benevolence have a common root in sympathy. Justice is the more fundamental because necessary to attain the end of existence. Sympathy is a secondary condition less imperative but perhaps of greater moral worth. The conflict between egoism and altruism is less than that recognized by Spencer, because the merely individual ego is not the true ego, but the social ego is. The process of the adaptation of man to his ideal social state is a process in the spiritual evolution of humanity. Acts of heroism and martyrdom are done for the very pleasure of attaining the ideal. In the final sacrifice of self,

we should see the supreme manifestation of a sublime egoism. Thus the apparent antithesis is resolved.

In this eloquent conclusion the writer leaves out, as does Spencer in his *Principles of Psychology*, the question of the choice of motives, the fact that there are differences in the degrees of man's egoism, and greater selfishness in self-centered enjoyment than in the 'pure joys of the mind' through acts of charity. But as translator of Spencer's work the Italian goes more deeply than does the Englishman into the question of the origin and development of the moral sentiment—the subject of chapter III. Discussing the principles of the intuitive and empirical schools he shows that there is an historic relativity not only in the application of ethical principles but in the principles themselves. Here the conscience would seem to be a plastic and unstable faculty. This is against the intuitionist theory of the moral faculty as independent and transcendental. Yet how are we to explain the existence and authority of the moral sense and the feeling of obligation in uncivilized man? Utilitarianism makes the sense of obligation and constraint a product of the action exercised on human nature by the rigid discipline of social life. But this does not explain how during the life of a single individual there can arise the idea of virtue in the form of a concept transcendental, independent, autonomous. The moral faculty cannot be derived from the pleasurable and painful experiences of the individual. Yet morality benefits the psychic life as pleasure the physical; therefore in the evolution of humanity morality tends to increase. Justice and love are the conditions necessary to the development of the higher life. By the laws of adaptation and natural selection the social and sympathetic feelings become habitual, organic, and transferable to posterity. Yet these biological and evolutionary laws are not sufficient to explain the formation of morality, which presupposes the ideal factor as the indestructible element of the ethical conscience.

The author next disposes of the associational school. John Stuart Mill is said to commit the same error as Bentham in making morality consist of rationality plus the association of ideas and in confounding the popular sanction with the moral sanction. Certainly each altruistic sentiment is a manifestation of the ego, but how can pure egoism carry the individual outside of himself? So modern voluntarism as represented by Wundt and James is wrong in confusing impulsive actions with simple voluntary actions. The will should be considered to be inserted between the motive and the action. When the action follows immediately upon the motive, the action can be called in-

stinctive, impulsive but not voluntary. So in the objective world causation appears the product of a blind necessity, in the subjective dependent upon changeable motives, *i. e.*, the causality of voluntary actions is not mechanical but psychical, and associationism is weak in deriving all the mental processes from representations. Again, in the evolution of the ethical conscience there is a gradual passing from the simple reflex action, in which there is an immediate relation between stimulus and motive, to those lengthy deliberations and calculations of the probability of the various consequences and the worth of the correlative sentiments which constitute the mature judgment. Nevertheless the feelings still form a norm of conduct whose authority is greater the more remote they become, through their complexity and ideality, from simple sensations and mere appetites.

In the conclusion, part IV., of this work, the author sums up his theory of the evolution of the moral conscience by a further criticism of the rival schools. Associationism, he asserts, makes man an automaton and his conscience a complex of psychic states determined by action of the external world. Transcendentalism makes him a being purely logical and rational who can determine his actions in virtue of a purely theoretical faculty, independent of the feelings, and the two extremes meet in a common determinism. Kant's moral law is an incorporeal phantasm of physical laws, a mechanical conception of the moral order. The categorical imperative, as Felix Adler remarks, comes down like a blow on the head. Suppose, as Kant conceived, that every word pronounced and every action done were determined by the abstract idea of universality and necessity. How, then, would that be superior to the physical order? Such a perfect automatism could only be accomplished in the distant future and during a long interval the conscience would be a superfluity. So the writer returns to his original plan of a compromise between an empirical realism and a transcendentalism. He concludes that the foundation of the moral sentiments in human nature is an integration of both feeling and reason. The one implies the other, since neither content without form nor form without content can constitute the essence of the moral character.

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*The Place of Values.* REV. G. R. MONTGOMERY, Ph.D. Bridgeport, Conn., The Author. 1903. Pp. 62.

This pamphlet, a private publication, is another contribution to the discussion started by the general interest in the antithesis of appre-

ciation and description. 'What relation or articulation is there between values and truth?' is the way the writer presents his problem. It is unfortunate that he felt called upon to devote so much space to emphasizing the importance of the question, — surely a procedure now scarcely necessary, — otherwise his conclusions might have gained both in clearness and significance by a less sketchy presentation. As it is, it is not clear that any new light has been thrown upon this vexed relation of truth and values, unless such light is given in the conclusion that 'the advance into reality is an advance on two legs, worth bringing truth into new fields and truth leading the way to new worths!'

The author's general position is the well known view (for which, however, he seems to claim novelty) that worth is the irreducible subjective aspect of experience left over after all content, including feeling and will, has been relegated to the objective presentational side. It cannot be identified with feeling or will, therefore, and cannot be presented or described in these terms or in those of unity or energy which belong to the object. "The subjective characteristic of the Ego or Self is not its unity (Ladd) nor its energy (James). It is the appreciation of worths." So far, so good. With this cutting of the knot we are familiar. Having learned so much of Münsterberg, he ought, we should expect, to follow him farther and banish worth to a region where it will cease from troubling, where it does not meddle with description and does not itself ask to be described. But no — instead of that he arraigns Münsterberg for banishing worth from psychology and for handing it over to a transphenomenal, attitudinizing will. He asks how Münsterberg knows enough about this subject to call it will, instead of letting it answer to 'Hi' or any loud cry. In fact, he insists that worth is primary and fundamental in psychology, at the same time refusing it description in any terms by which it will be recognized by that science. To what cry of the writer's will this same elusive worth answer?

His method of developing this position is somewhat sketchy and oracular and it may be that we do not understand him. Yet, it does seem that we have to do here with a fundamental contradiction, and one, too, which arises from a failure to quite grasp the psychological problem. Surely psychology can do nothing with worth unless it is in some way presented for description. It may be subjective 'meaning,' but it must be a founded meaning among elements, affective-volitional meaning, and is incapable of entering within the range of psychology without connection with descriptions of feeling and will. No one imagines that description of worths in terms of

feeling and will is exhaustive, but it is the only way that they can enter into psychology. What meaning is there for psychology in the following attempt of the writer to define worth psychologically by negation — "The birth of consciousness in the lowest animal life is indicated by the appreciation of worths not by feeling. The subjective factor in the simplest organism is not feeling but worth, and only in the highly developed consciousness are certain subjective elements degraded to feelings"? Surely none.

But enough. We have perhaps taken this contradiction as a text for too long a sermon. The truth of the matter seems to be that, if we may make use of a homely figure, one cannot have his cake and eat it too. We cannot enjoy the many immediate pleasures, the simple solutions of difficulties that the antithesis of appreciation and description seemingly affords, and at the same time keep worths within the land of phenomenal existences to be looked at, handled and described. Dr. Montgomery, it is to be feared, has not sufficiently realized the force of this practical dilemma. But he is scarcely alone in this and his thesis may be taken as a good illustration of the kind of confusion that seems to inhere in much of the discussion of this problem.

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*Ethics, a Science.* EVANDER BRADLEY MCGILVARY. *Philosophical Review*, Vol. XII., pp. 629-648.

Science, according to Professor McGilvary, is knowledge; whereas art is production. Sciences are divided into two classes: (1) those dealing with objects of human production and achievement (and these have correlated arts), and (2) those dealing with objects not brought about by human agency.

Ethics is a science of the first class, its correlated art being morality. Moreover, it is not what is commonly termed a 'normative science,' for "we may say that no science lays down any rules whatever, hence if a normative science is defined as a science that lays down rules, it must be replied that it is by that token not a science" (p. 633). The thesis being that ethics is a science, it follows that "ethics did not create morality, nor does it legislate to moral beings better moral laws. It describes the various types of morality and the results flowing severally from these types" (p. 634). The science of ethics finds its 'empirical data' in morality.

It studies these data, and in the 'implied statements of connection between certain courses of action and certain generally desired ends

which the moral individual reads into the scientific description, lies the *practical value* of ethics.

Dr. McGilvary thus treats ethics as pure science: in method descriptive, in subject matter empirical, in aim epistemological, theoretical through and through, yet of more or less clearly defined practical value.

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*Les Principes de la Morale Positiviste et la Conscience Contemporaine.* GUSTAV BELOT. *Revue Philosophique*, LVI., 1903, No. 12.

M. Belot's aim is to show that the positivist view of morals has more than merely historical value. In ethics, he holds, Comte's independence of theology and metaphysic is a merit. Science cannot avoid the critical problem, but morality calls for no foundation other than the autonomous human will. Even the principle of the unity of Humanity is not metaphysical, since Humanity need not be given, it need only be willed. Altruism is for Comte a primitive fact, enabled by social influences slowly to absorb egoism. Thus, as in the best recent thought, man is regarded as essentially social. The individual is not sacrificed to the whole; rather Humanity is realized in the individual's free identification of himself with his social function. Comte supposes that as knowledge grows positive and the will self-disciplined, exposition will forestall discussion and safeguards for liberty will become as needless as coercion. These naïve assumptions and the psychological errors permeating his view of religion give an impression that he opposes the modern demand for freedom of thought and political liberty; but if we penetrate beneath details to the principles stated above, such a judgment is seen to be unjust.

The prejudice that M. Belot combats is naturally less prevalent outside of France; for one reads a foreigner as one reads an ancient, hoping for value in his main conceptions, but not expecting to agree with him in details.

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#### PRAGMATISM.

*The Eternal and the Practical.* JOSIAH ROYCE. *Philosophical Review*, XIII., 1904, pp. 113-142.

All thinkers in contemporary philosophy are more or less both empiricists and pragmatists. Therefore the central questions of modern investigation are, first, the problem as to the place which our empiristic tendencies ought to take in our philosophical system, and

secondly, the problem as to the part which our practical considerations and undertakings ought to play in determining this system. The author proposes to discuss this latter question of the relation of our doctrine of conduct to our theory of truth.

As a preface to his argument, Professor Royce makes a general statement of his own point of view. He says that while he believes in pragmatism in so far as to maintain that every one recognizes no truth except that which he helps to constitute, that truth is not a finished thing but is now in the process of becoming, and that our judgments are made in response to a need for control over a present empirically given situation — while he believes all this, yet his final hope is in something eternal and absolute.

In exposition of the spirit of pragmatism, Professor Royce says it maintains that all mental activities are essentially practical. Will and intellect are not two different things. A man thinks because it is to his interest to think. Moreover, though apparently inactive, the thinker is planning motor processes and in the end or even while he is thinking them he is putting them into effect. Mentally he constructs scientific instruments and methods and so ultimately in these expressions of his thoughts he may direct the activities of a vast number of men. Nor does the thinker regard his ideas as mere passive objects of contemplation but as his own deeds, for a thought out of relation to any deed is an impossibility. It is true that thought is in one sense a suppression of overt activities, yet these activities are incipiently taking place and are prevented from outward expression because of certain inhibitions, not because the appearance of a new consciousness which may be called volitional is necessary. After the removal of such inhibitions, even decidedly abstract thinking is displayed in very practical attitudes, as for example in gesticulations such as the placing of a forefinger upon the palm of the other hand, the speaker so 'showing how he lays his finger upon truth itself.' Our thinking is, in fact, the consciousness of our adjustment to our present situation.

But pragmatism attempts to define not only our thinking consciousness in practical terms, but also the reality of which we are conscious. It holds that reality is not something given to us from outside which judgment copies. What is directly given to us at any moment is our specific need for further intelligence in action. And our clear judgment, that is, what we make out of this given need, is *ours* in the sense of our adjustment of ourselves to our present needs. In other words, we have no object except that which we construct

through reflection in necessary response to our momentary needs and in accordance with our habits of thought.

So much as to the statement of what the author calls pure pragmatism. This view, he asserts, though avowedly held by some, actually is and can be held without modification by no one. Unmodified it leaves no room for any sort of absolutism; it predicates a world of transient meanings which conform to no universal truth. Each one of us has his own needs; these needs change. Pragmatism is therefore a pluralism; its evidence rests upon what you can now observe of your present thought and its objects. On this basis the truth of a judgment means nothing more than that it just now meets my needs.

This statement forces us to observe our need of companionship in our beliefs. The most stubborn pluralist always wants other thinkers to agree with him. This fact is exemplified in the tendency to expound pragmatism in forms that are not pure. For instance you find so-called pure pragmatists emphasizing the necessity of taking careful account of the theory of evolution. Like all things, they say, thought and the categories of thought, truth, reality, objectivity, are products of a process of evolution which is determined by the need of adjustment to environment. The pragmatist, therefore, recommends his theory on the ground that it is a corollary of the generally accepted doctrine of evolution. That is, the pure pragmatist is guilty of a fallacy; he says that his belief in evolution is pragmatic and then attempts to confirm pragmatism on the ground that it logically follows from the theory of evolution. The reason for this is just his need of companionship suggested above. By appealing to accepted doctrines he can get hearers for his argument. He is not content with the mere pragmatic sanction; with a judgment which is just a reaction to the present conscious situation; he wishes that what is true for him should be true for others.

Now this need for companionship in its ultimate analysis is our need for an objective, eternal truth, for truth which is something that is not merely what we at any one moment need to believe, but something that we *ought* to need to believe both now and at all times and that others *ought* to need so to believe. That is, the truth of a judgment is not merely the unity of my construction of the present moment and of the momentary constructions of others; the truth of a judgment implies an *ought*. Are these other momentary judgments what they ought to be? Are our agreed judgments merely our present reactions, mere attitudes, not genuine truths at all? The ought goes beyond

mere multiplicity of constructions. If there is a true and a false, there must be a view from which the ought is known, not as simply a single passing, unstable, chance point of view, but as the object of one self-possessed and inclusive insight which remains invariant. This presupposes a self that consciously includes all pragmatisms in such a way that if you conceive of other points of view no change would result in the characterization of its object which this self could view as true. A judgment has a place in a complete system of truth or else it is not true. If there is such a self, then the significance of the practical, namely, everything that is finite and temporal, is borrowed from that which is eternal not in the sense of something that outlasts time — only abstractions do that — but in the sense of something that includes and knows that it includes all the varying points of view in the unity of a single insight, so that every possible additional point of view would leave this insight invariant. So much for the summary of the author's discussion.

If the above conclusions may be questioned, it might be asked if this conception of a selfhood which is on the one hand absolute, invariant, and out of time, and on the other hand made up of innumerable finite changing, temporal selves — if this conception does not involve an antinomy such as characterizes all metaphysical explanatory assumptions?

The necessity for these conclusions the article bases on the statement that pure pragmatism fails to meet all of its own conscious needs. In order to consider how far this statement is true, we may ask whether the evidence of pragmatism rests upon 'what you now can observe of your present thought and its objects' or upon the efficiency of the method you are now pursuing in your ongoing observations and judgments. Ultimately the test of this efficiency is of course in the consequences. But we do not have to wait for this sequel; foresight, deliberation, conscious inquiry, serve to function for the actual experience. Now these processes are in each case at once both the definition and identification of means and ends, of object or instrument and subjective purpose, whether designated as practical, intellectual, or spiritual, and since we can know nothing apart from experience, these processes are in each case the definition and reconstruction of opposing phases of experience, variously interpreted as subject and object, Ego and Alter-Ego, the eternal or absolute and the transitory or practical, the transcendental and the particular. In the course of reflective thought these categories have been set up as independent entities, so that the problem of understanding the nature of experience has been somehow to bring them together. And the theory of evolution as

applied to experience is a pragmatic belief in the degree to which it solves this problem. We may conceive of experience as a growth unity in which thought categories are organic, functional differentiations, not symbols of independent entities. Thus we find that there is no problem of connecting subject and object and so on. The term *growth* as applied to experience gives us both the eternal and the transient, for it means on the one hand that everything is passing because it is always growing and on the other hand that everything is eternal just because it is a phase of the total growth process. Moreover, the organic conception of experience recognizes no consciousness which is merely individual. The present aspect of consciousness is an outgrowth of the past of the race and of the present processes we call communication, sympathy, and coöperation. So the so-called particular, momentary need is in reality the focus of the social situation. Moreover, from this point of view the universal is an abstraction considered apart from the particular; the true universal or standard is method, which has its validity in the efficient realization in the particular.

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#### PHILOSOPHY.

*Nature of Man; Studies in Optimistic Philosophy.* ELIE METCHNIKOFF, Professor at the Pasteur Institute. English Translation edited by P. Chalmers Mitchell, M.A., D.Sc. Oxon., Secretary of the Zoölogical Society of London. New York and London, G. P. Putnam's Sons, 1903. Pp. xvii + 309.

Dr. Metchnikoff, 'one of the high priests of Bacteriology and a guardian of the Pandora's box of modern times' (p. iv), has proposed an ambitious program in this work. On the whole, it is an attempt at a theory of the future of humanity, based on 'a new faith, that in the all-powerfulness of science' (p. vii). In this large connection it is assuring to be told, by Dr. Mitchell, that 'for the first time proper knowledge has been brought to the task' (p. vii). Whether the author will thank his sponsor for a somewhat rhetorical testimonial is another affair, with which we need hardly trouble here.

The book might be characterized as the last of four main steps in the development of a certain line of post-reformation thought. First came the old materialism, with its occult, crass substance or unknowable matter; with its consequent phenomenalism of masses and substances related to one another according to mechanical laws; and with its deterministic doctrine of human nature. It may be interesting to note that it is not very long since this view, now abandoned, arrogated

to itself the notion that 'for the first time proper scientific knowledge has been brought to the task.' Followed the classical idealism of Germany which, basing on man's ideal nature, found a last refuge for a hyper-rational interpretation of human life. Then theological agnosticism appeared, with its blow-hot, blow-cold views, and attempted to rend the seamless garment of experience. Now Dr. Metchnikoff makes his entry and, like the lean kine of the vision, calmly devours all these fattened oxen. In the circumstances, his plan takes on large outlines; so, after showing the futility of religio-theological and of philosophical theories, he proceeds to a sketch of human nature as it is and of its accordant future destiny. Admirably equipped for this task on certain biological lines, as every expert is aware, his outfit otherwise hardly inspires like confidence in his ability to carry the great issue to successful conclusion. One is inclined to recall the useful adage, that the cobbler should stick to his last. In particular, our author seems to rely to a great extent on psychological conditions for the solution of his problems. Yet, his psychological basis, so far as it presupposes competent knowledge of what is now accepted by psychologists, appears somewhat slender. Indeed, his comparative disregard of all that our knowledge of man's psychological organization involves is one of the most interesting and tell-tale features of his book.

Briefly stated, the thesis runs as follows: The first men, being 'probably ingenious children, born of anthropoid parents' (p. 59), their descendants have become the prey of certain disharmonies, thanks to the operation of evolution. There are disharmonies due to the presence of vestigial and inimical (*e. g.*, the digestive tract) physiological organs. Again, there are disharmonies connected with the organs of reproduction, and consequent disharmonies in the family and social instincts. Finally, there are disharmonies in the instinct of self-preservation. At best, religions and philosophies have been unable to do more than palliate these evils. It remains for science to find a real cure. "Science has undoubtedly gone far in the successful treatment of disease, both as regards prevention and cure, but it is powerless before those other evils from which Buddha implored his father to grant him exemption—old age and death. \* \* \* Not only is no remedy for old age known to science, but little or nothing is known with regard to that period in the lives of men and animals. It was no easy task to compress an account of the present position of medicine within a few pages, the subject matter being overwhelming in quantity. With regard to old age it is quite the contrary, our knowl-

edge being so limited that the subject may be dealt with in a few lines" (p. 229). Now, old age and death are caused by "the atrophy of the higher and specific cells of a tissue and their replacement by hypertrophied connective tissue. \* \* \* So universal a symptom of old age is the invasion of the tissues by macrophags that it must be regarded as of immense importance. \* \* \* The human race has inherited from its ancestors an enormous large intestine and conditions favourable to the life of bacteria. It has to endure the disadvantages of this heritage. On the other hand, the brain of man is very highly developed, and with the increase of intellectual power has come a consciousness of old age and death. Our strong will to live is opposed to the infirmities of age and the shortness of life. Here lies the greatest disharmony of the constitution of man" (pp. 238, 242, 253). If science can acquire command over the physiological facts involved, it will acquire power over the disharmonies, to their transformation. Its aim must be to safeguard man against the invasion of the higher elements by phagocytes, and thus to render natural death, which is 'probably a possibility,' an 'actual occurrence' (p. 277). When this is accomplished, the instinct for natural death will appear, or at least, man will be placed in a position to cultivate it. "Old men, in spite of their attachment to life, do not attain the capacity to know all that is good in it, and die, in the fear of death, without having known the instinct of death. They may be compared with unhappy women who have married before their sexual instincts have awakened and who have died in childbirth, without ever having known the real joy of loving. \* \* \* The advancement of civilization and of medical knowledge has greatly reduced the number of such unhappy women. We must hope that the progress of knowledge will bring about a similar advance in relation to the instinct of death. With that progress, the number of men who will live until the instinct has been attained will become greater and greater" (pp. 283-284).

All in all, the book must be judged stimulating and suggestive, abounding, as it does, in original points of view; besides, it is marked by a species of optimism that cannot fail to win upon the reader. But it is very feeble on the philosophical side, unsatisfactory on the psychological, and, on the whole, based on premises far too narrow to bear the magnitude of the conclusion. Nevertheless, Dr. Metchnikoff's sensitiveness to problems of this character cannot but be cited as one of the many encouraging signs of the times. They are not new, nor are the remedies few; even if, to an inquirer who has suddenly come upon them from an unusual angle, they may seem startling, and the remedy one and one alone.

R. M. W.

*Transitional Eras in Thought with Special Reference to the Present Age.* A. C. ARMSTRONG, Ph.D., Professor of Philosophy in Wesleyan University. New York, The Macmillan Co., 1904. Pp. xi + 347. \$2.00.

Professor Armstrong has occupied a field which has long lain open and in need of tilling. His method of preëmption has many things to commend it. Most of all, he contrives to maintain a remarkably judicious attitude, which makes for confidence in his guidance. Chapters I.-V. are admirably executed; while, partly by contrast with these, partly from their inherent hesitancy, chapters VI. and VII. suffer by comparison. They are limited, as it seems to me, by absence of a definite, constructive standpoint, as if the author himself were caught up in the swirling eddies of transition.

The most valuable feature of the work is to be found in its suggestiveness. Passages which set one thinking are by no means infrequent. If taken as texts, they are found to contain ideas which might well be developed at some length, and to much profit. The following may serve as illustrations. "Often as the variations in scientific theory have wrought their momentous consequences in human thinking, it has been their reflex effect on other departments of thought—philosophy, for example, or religious faith—that has constituted the chief element in their influence" (pp. 8-9). It is a well established fact that Newton, the Deists, and their orthodox opponents, all contemplated the same general view of the universe, which might well be termed neither Deistic nor anti-Deistic, but Newtonian. The passage on pp. 20-21, noting the rise of ethical systems in stages of intellectual transition, might surely become the theme of a fascinating volume. For, 'the disappointment which scepticism breeds is never so acute in the intellectual as it is in the moral stage' (p. 32). Similarly, much wisdom is concentrated in those brief sentences: "Wherever we strike into the stream of religious change, how plain it is that the movement is in fact a reformation of faith and practice, rather than an abandonment of them" (p. 61); "Important also was the lack of historic insight into the origin and growth of human institutions which formed so marked a characteristic of eighteenth-century reflection and made it an easy prey to the passion for reform by means of artificial re-creation" (p. 69); "Despite the mordant character of their doubt \* \* \* the negative thinkers of the time are peculiarly sensitive to the claims of the spiritual nature, \* \* \* they are animated by a constructive impulse in matters of morals and faith, even when the principles from which they start constrain them to reach results which are for the most

part meagre, in some instances little better than grotesque" (p. 85). And here is a wise passage, which explains many puzzles in the prevalent attitude of science: "The scientific investigator is not haunted by the lurking suspicion that after all his work may be illusory, because it is given to no finite mind to reach the truths which form the goal of his inquiries. If a mistake is made, it is incidental to the general fallibility of human thinking. If a new discovery takes the place of some time-honored theory, thought does not dwell in sadness on the limitations of human intelligence, but rejoices that once more an addition has been made to the long series of triumphs over the mysteries of nature. \* \* \* The most poignant distress engendered by transitions in thought is therefore unfamiliar to the scientific mind" (pp. 96-97). The account of the manner in which the success of science in recent times has acted as a check upon the development of scepticism (p. 111 ff.) presents points at once original and attractive. Attention should also be called to the judicious remarks on the fallacies inherent in such otiose metaphors as 'the social mind,' 'the social organism,' and the like (p. 209 ff.). In the same way, many irritable and irritating theologians would do well to digest the practical applications of these passages: Jesus "centered his labors and those of his disciples upon the redemption of the individual, leaving the redemption of the community to follow from the regeneration of its members" (p. 231); "Christian men and the Christian church should shrink from the peril of bringing discredit on the faith by a timorous literalism, which, forgetting the example of the Master and his early followers, hesitates to live in the light of open day, to bring religion into touch with the needs and the movements of the times" (p. 237).

As I have indicated, the treatment of the 'faith philosophy' leaves much to be desired. It is indefinite and lukewarm, to some extent even encouraging obscurantism. It would have served the purpose better had Mr. Armstrong taken more decisive ground in working out his acute view, that these movements 'belong still in the era of confusion' (p. 295), with strong emphasis on 'confusion.' In a word, he has permitted his materials to dictate to him here, and so has failed to mold them to his will. One other blot. In places the style makes needless demands on the temper. "Revolutionary in their significance because subversive of accepted views concerning the origin of species, his conclusions were based on so broad an induction from the facts, as in themselves they were so carefully wrought out and with so close observance of the rules of scientific investigation, that they established for modern thought a principle which had hovered before the mind of

thinkers since very early times, but which has waited until the middle of the nineteenth century for its definite confirmation" (pp. 158-159). I call attention to this for a reason which appears in the next paragraph.

The book ought to prove most useful to teachers who insist upon thought from their students. As a text, tending to stimulate thinking rather than memory, it is to be commended highly. In this regard I press it upon the attention of my colleagues, showing my faith by works—I have already prescribed it. My anticipation is that it will effect not a little to prevent that besetting sin of the 'bright' student, 'the fallacy of hasty and exclusive application in the employment of a new theory of inherent and comprehensive value' (p. 183). There is a good working index.

R. M. W.

#### ÆSTHETICS.

*Einfühlung, innere Nachahmung, und Organempfindungen.*

THEODOR LIPPS. Arch. f. d. ges. Psych., 1903, I., 185-204.

The author here makes a strong presentation of the theory that the cognitive element is absent or at a minimum in the æsthetic impression. "The specific character of æsthetic enjoyment lies in the enjoyment of an object (Gegenstand) which, in so far as it is the object of enjoyment, is not object, but subject." This process of fusion he calls 'Einfühlung.' It is the fact that the opposition between the subject and the object disappears, or rather, does not exist.

All æsthetic impressions are derived ultimately from sensory presentations or representations. When one views a graceful movement he becomes identified with the movement in his consciousness; and, in so far as one can speak of the spatial relations of consciousness, he is right there in the place of action. This losing of one's self in the action is the 'innere Nachahmung.' This æsthetic imitation extends also to situations in which there is no actual, but merely suggested movements or strain. There is a tendency to realize the suggested movement in self and this tendency is satisfied by seeing the movement in the object. The same principle applies to attitudes, strains, forms, especially architectural, whether real or suggested.

The organic sensations in question he calls induced strains and his main proposition is that these induced strains, as such, have no significance whatever in æsthetic enjoyment. Hence he rejects the views to the contrary in three forms: (1) The confusion of these induced strain sensations with the feeling of activity, the feeling of effort, etc.; (2) that these sensations constitute the ground of the æsthetic enjoyment or contribute toward it; and (3) that the æsthetic enjoyment

consists in having these organic sensations. 'Einfühlen' is not to feel something in one's body, but to feel one's self into the æsthetic object. In short, organic sensations do not enter into the æsthetic enjoyment, and it is the duty of scientific æsthetics to recover itself gradually from this 'Organempfindungskrankheit.'

C. E. SEASHORE.

UNIVERSITY OF IOWA.

*Ein Beitrag zur Experimentellen Æsthetik.* OSWALD KUELPE.  
American Journal of Psychology, Vol. XIV., pp. 215-231.

In this article Professor Kuelpe reports some preliminary tests in experimental æsthetics, which he made in order to determine what factors were present in the judgment of an æsthetic object.

By means of a projection lantern a picture 1.5 meters in diameter could be thrown upon a screen, and at the end of three seconds could be instantaneously cut off. The twenty-eight pictures he used in these experiments were chosen for variety, and he selected those that would be unfamiliar to a person having only an ordinary knowledge of art. They included human figures, and objects such as ancient buildings, temples, and columns.

The observers sat in a dark room, four meters in front of the screen. They were told that a picture would be shown them for three seconds only. Their instructions were to look attentively at the picture during the three seconds, and at the end of that time to give as full an account as possible of it, stating whether it had seemed pleasing, displeasing, or indifferent, and what particular things had attracted their attention. They were asked to sit as passively as possible but to report any tendency to movement they felt. In order that the three observers might always begin their observations at the same place in the picture a fixation point was first thrown upon the screen. Two seconds before the picture was projected the subject was warned by a 'Jetzt' to look at the fixation point. As soon as the picture was seen he was free to observe it in any way he wished. The reports of the three observers differ greatly. Professor Kuelpe does not find the æsthetic sympathy (Einfühlung) which Lipps points out as the essence of æsthetic enjoyment. Color and brightness play a great part in forming the judgment of a picture; but as only three of the slides were colored, the factor of color could not be a prominent one in his experiments, nor had it a constant effect. One subject failed to notice the colors, another found them very pleasing, while the third was indifferent to them.

Brightness in itself was not important, but the relative brightness of the different parts, the lights and shadows, often caused the subject

to comment on the technique of the picture. Much of the enjoyment was due to the form, arrangement, proportion, symmetry, and harmony of the objects depicted, and the dislike was due to the lack of one or more of these factors, but more pleasure was found in the meaning, the real significance of the picture as a whole. This is the more striking as a full understanding of the picture could scarcely be obtained in the short time during which it was seen.

One observer found a unity in every picture. The principle of unity and gradation of interest (*Einheit und Abstufung des Interesses*) which Professor Kuelpe has spoken of elsewhere,<sup>1</sup> greatly influenced the judgments of this one observer. The other two observers found pleasure in the variety of ideas. To them the pictures were seldom too uniform or too monotonous, since in general in the short time of exposure the attention was kept fully occupied with the objects in the picture. In the judgments of these observers Professor Kuelpe thinks that the principle of fitness (*Zusammengehörigkeit*), which he has formerly described,<sup>2</sup> has had more influence than the principle of unity. The principle of fitness he feels was an important factor in the judgments of all three of the observers.

In the recognition of the idea or significance of the picture we have the source of pleasure which Aristotle pointed out in his *Poetics*. The associations and memories awakened are those which are embraced under Fechner's association principle, and can in part be traced back to the 'æsthetic sympathy' of Lipps.

All the observers felt sensations of movement, a tendency to imitate the attitude or the motion seen. But as these sensations became pronounced only when the objects were human beings in unusual or peculiarly lifelike attitudes, Professor Kuelpe does not think they are of general significance. He finds in these experiments additional evidence in support of his former criticism of Groos' 'inner imitation' theory. The 'æsthetic sympathy,' which Lipps says is typical, he finds, in spite of careful questioning, to be scarcely present at all when Doric and Corinthian columns were the objects looked at.

Professor Kuelpe points out the need of further investigations in this field, which he has just opened up. He suggests a greater variety of pictures, an increase and decrease in time, and a different type of observers. His observers were all men and trained psychologists. The individual differences found in their judgments makes it seem probable that children and others untrained in art would differ still

<sup>1</sup> *Vjs. f. wiss. Philos.*, XXIII., 170 ff.

<sup>2</sup> *Götting. gel. Anz.*, 1902, 909 f.

more greatly. If care is taken in recording and analyzing the statements of the observers, the systematic carrying on of experiments by this method would, he feels sure, throw light on the criterion of judgment of æsthetic objects.

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### BOOKS RECEIVED FROM JUNE 7 TO AUGUST 7.

*Essai sur l'évolution psychologique du Jugement.* TH. RUYSSSEN. Nîmes, Impr. Coop. 'La Laborieuse,' 1904. Pp. 382.

*Library of Congress. Select List of Recent Purchases in Certain Departments of Literature.* Washington, Govt. Printing Office, 1904. Pp. vi + 326.

*Man and Woman.* H. ELLIS. 4th ed., revised and enlarged. London, Scott; New York, Scribners (imp'd). \$1.50. [The original edition appeared in 1894.]

*Selections from the Literature of Theism.* ALF. CALDECOTT and H. R. MACKINTOSH. Edinburgh, Clark; New York, Scribners (imp'd), 1904. Pp. xiii + 472. \$2.50 net.

*Annual Report of the Surgeon General, etc. (1903).* Washington, Govt. Printing Office, 1904. Pp. 572.

*Recherches algésimétriques.* J. IOTEYKO and M. STEFANOWSKA. Brussels, Hayez, 1903. Pp. 86.

*Rapport Quinquennal sur les travaux du Laboratoire psychologique Kasimir (Université de Bruxelles).* [MLLE.] J. IOTEYKO. Brussels, Hayez, 1903. Pp. 20.

*The Individual and his Relation to Society, As Reflected in the British Ethics of the Eighteenth Century.* JAMES HAYDEN TUFTS. Monograph Supplement No. 25 of the Psychological Review. New York, The Macmillan Co., 1904. Pp. iv + 58.

*L'Année Psychologique; Xe année, 1903.* ALF. BINET and others. Paris, Masson, 1904. Pp. 680.

*Edgar Poe, sa vie et son œuvre.* EMILE LAUVRIÈRE. (Bibl. de phil. Contemp.) Paris, Alcan, 1904. Pp. 732.

*La mimica del pensiero.* SANTE DE SANCTIS. Milano, R. Sandron, 1904. Pp. 209.

## NOTES AND NEWS.

THE International Congress of Arts and Science, which is to be held in connection with the Exposition at St. Louis, will meet September 19 to 25, 1904. We note the following from the official program. The first day is to be devoted to the Opening Exercises, at 3 p. m. On September 20 the seven Divisions hold meetings at 10 a. m., one address in each Division. Division A, Normative Science, includes Philosophy; the speaker is Professor Josiah Royce, of Harvard. Division D, Mental Science, includes Psychology; the speaker is President Hall of Clark. Following this are the meetings of the Departments. Philosophy meets at 11.15 a. m., with Professor A. C. Armstrong (Wesleyan) in the chair; the speakers are Professors A. E. Taylor (McGill) and A. T. Ormond (Princeton). Psychology meets at 2 p. m., with Professor Noah K. Davis (Virginia) in the chair; speakers, Professors J. Mark Baldwin (Johns Hopkins) and J. McK. Cattell (Columbia). On the four following days the meetings of the Sections are to be held, sessions lasting from 10 to 1, and from 3 to 6. The arrangement for these, which is provisional, however, and subject to alteration, includes the following. Social Psychology, September 21, 3 p. m. Psychiatry, September 22, 10 a. m. General Psychology, September 23, 10 a. m. Experimental Psychology, 3 p. m. Comparative Psychology, September 24, 10 a. m. Abnormal Psychology, 3 p. m.

It is with very great regret that we record the death, at the age of sixty-one, of M. Tarde (Jean-Gabriel de Tarde), the distinguished sociologist of Paris.

MR. W. M. STEELE, assistant in the Yale Psychological Laboratory, has accepted a call to a professorship of philosophy in Furman University, Greenville, S. C. Mr. Steele will take up his duties in September.

THE *Année Psychologique*, the tenth volume of which has just come to hand, is from now on to be published by the Librairie Masson, 120 Boulevard St. Germain, Paris. It will appear regularly in the month of June.

At a meeting of the Yale Corporation, held June 27, the resignation of Professor George T. Ladd from the chair of moral philosophy and metaphysics was presented and accepted, to take effect at the close of the college year 1904-5.

PROFESSOR E. H. SNEATH, of Yale University, has been transferred at his own request to the headship of a department of the the-

ory and practice of education. Professor Sneath will organize the work in education at Yale, including a summer school, the first session of which will be held in 1905.

THE following items are taken from the press:

DR. H. AUSTIN AIKINS, professor of philosophy in Western Reserve University, is in Europe on leave of absence for the coming year.

AMONG the lecturers announced for the Glenmore Summer School of the Culture Sciences (July 11 to September 3) are Professor C. W. Bakewell, on 'The Philosophy of Plato'; Dr. E. G. Spaulding, on 'Dogmas in Philosophy and Science'; and Professor J. Mark Baldwin, on 'Social Psychology.'

MLLE. JOTEYKO, lecturer on psychology in the University of Brussels, has been elected vice-president of the Neurological Society of Belgium.

DR. THADDEUS L. BOLTON, assistant professor of philosophy at the University of Nebraska, has been made professor of psychology at the same institution.

AMHERST COLLEGE has conferred the degree of doctor of laws on Dr. J. H. Tufts, who has recently been appointed head of the department of philosophy of the University of Chicago.

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## CONTENTS OF THE MAGAZINES.

AMERICAN JOURNAL OF PSYCHOLOGY, XV., 2. The Soul — A Study of Past and Present Beliefs: *L. D. Arnett*. General Intelligence Objectively Determined and Measured: *C. Spearman*. Miscellany.

ANNÉE PSYCHOLOGIQUE, X. La création littéraire. Portrait psychologique de M. Paul Hervieu: *A. Binet*. La biologie et la psychologie d'une araignée: *Lecaillon*. Un cas d'amnésie continue, avec asymbolie tactile, compliqué d'autres troubles: *Bourdon et Dide*. Sommaire des travaux en cours à la Société de psychologie de l'enfant: *A. Binet*. Méthodes de mémorisation: *Larguier des Bancelis*. Questions de technique céphalométrique: *A. Binet*. Herbert Spencer et Charles Renouvier: *H. Michel*. Sur la sensibilité de l'oreille aux différentes hauteurs des sons: *Zwaardemaker*. La graphologie et ses révélations sur le sexe, l'âge et l'intelligence: *A. Binet*. Revues générales. Analyses bibliographiques. Table bibliographique.

